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James H. Scrivens, Richard A. Yost

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Using a buffer gas modifier to change separation selectivity in ion mobility spectrometry

Roberto Fernández-Maestre, Ching Wu, Herbert H. Hill Jr.

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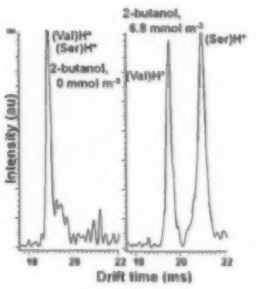
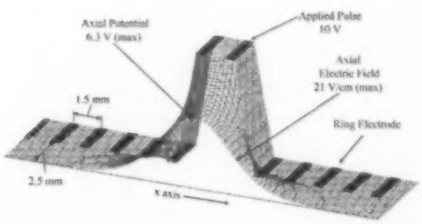


10–16

A method for direct measurement of ion mobilities using a travelling wave ion guide

Kevin Giles, Jason L. Wildgoose, David J. Langridge, Iain Campuzano

Whilst generally calibrated for ion mobility studies, this work demonstrates a means of obtaining mobility data directly using a travelling wave separation device.



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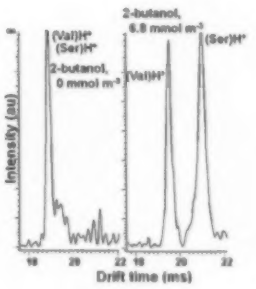

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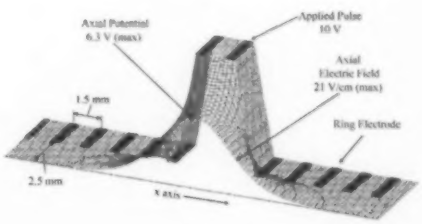

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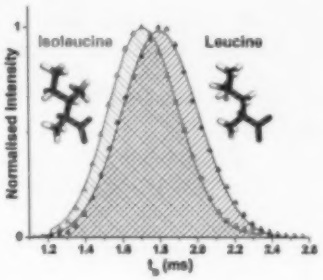
17–23

Considerations in experimental and theoretical collision cross-section measurements of small molecules using travelling wave ion mobility spectrometry-mass spectrometry

Tom W. Knapman, Joshua T. Berryman, Iain Campuzano, Sarah A. Harris, Alison E. Ashcroft

Separating structural isomers by travelling wave ion mobility spectrometry-mass spectrometry: experimental and theoretical collision cross-section measurement considerations.

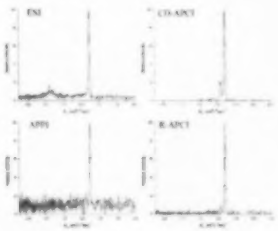


24–29

Characterization of a high resolution drift tube ion mobility spectrometer with a multi-ion source platform

Alexey Adamov, Timo Mauriala, Victor Teplov, Jaakko Laakia, Christian Schack Pedersen, Tapio Kotiaho, Alexey A. Sysoev

A high resolution IMS equipped with a multi-ion source platform allowing one to use different ionization techniques (ESI, CD-APCI, APPI, R-APCI) is introduced.



30–40

IMS–MS studies based on coupling a differential mobility analyzer (DMA) to commercial API–MS systems

Juan Rus, David Moro, Juan Antonio Sillero, Javier Royuela, Alejandro Casado, Francisco Estevez-Molinero, Juan Fernández de la Mora

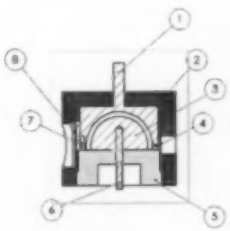
Progress in adding a mobility dimension to preexisting API–MS systems is discussed, based on inserting a differential mobility analyzer (DMA) as part of the MS's atmospheric pressure ion source.

41–44

Design and evaluation of a novel hemispherical FAIMS cell

Jennifer G. Bryant, Marilyn Prieto, Todd A. Prox, Richard A. Yost

A novel hemispherical FAIMS cell is introduced which allows ions to travel equal path lengths while minimizing diffusional losses and improving ion resolution without sacrificing ion transmission.

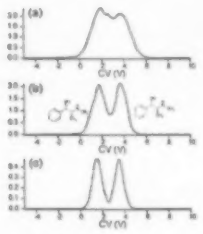


45–54

Planar differential mobility spectrometer as a pre-filter for atmospheric pressure ionization mass spectrometry

Bradley B. Schneider, Thomas R. Covey, Stephen L. Coy, Evgeny V. Krylov, Erkinjon G. Nazarov

This work investigates planar DMS. We discuss the principles of DMS separations and highlight the theoretical underpinnings. A variety of experimental results illustrate the performance of this type of interface.

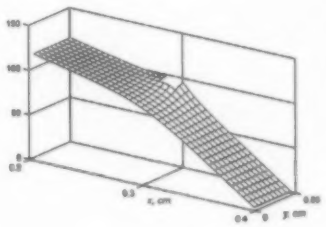


55–63

Generation of current pulses in collector electrode of IMS detectors

Jarosław Puton, Bogusław Siodłowski

The paper concerns the generation of the signal in the system consisting of collector electrode and aperture grid in detectors used ion mobility spectrometry.

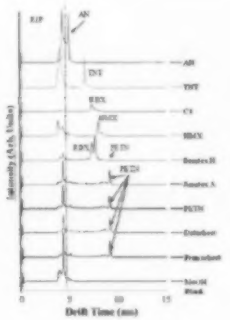


64–71

Improved analysis of explosives samples with electrospray ionization-high resolution ion mobility spectrometry (ESI-HRIMS)

Christopher K. Hilton, Clinton A. Krueger, Anthony J. Midey, Mark Osgood, Jianglin Wu, Ching Wu

A novel ESI-HRIMS allowed rapid quantitative trace level explosives analysis with resolving power > 60, where thermally labile explosives like PETN and TATP were detected intact.



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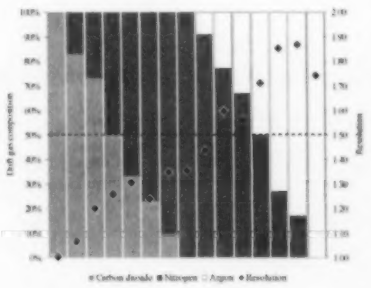
The effect of drift gas on the separation of active pharmaceutical ingredients and impurities by ion mobility–mass spectrometry

Mark D. Howdle, Christine Eckers, Alice M.-F. Laures, Colin S. Creaser

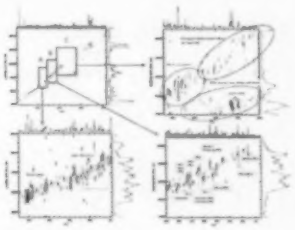
The effect of drift gas and binary gas mixtures on the separation of active pharmaceutical ingredients and related compounds has been investigated using ion mobility–mass spectrometry.



78–90

Metabolic profiling of human blood by high-resolution ion mobility mass spectrometry (IM-MS)

Prabha Dwivedi, Albert J. Schultz, Herbert H. Hill Jr

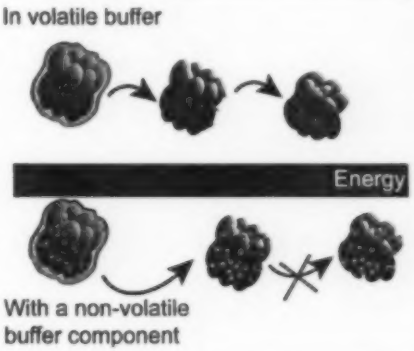


91–98

Residual counter ions can stabilise a large protein complex in the gas phase

Joanna Freeke, Carol V. Robinson, Brandon T. Ruotolo

Here, we use ion mobility-mass spectrometry to investigate the effects of aqueous buffer removal on the structure of an archetypal ring complex, GroEL, an 800 kDa chaperone protein complex from *Escherichia coli*.

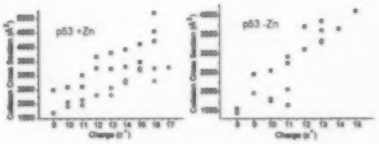


99–110

Utilising ion mobility-mass spectrometry to interrogate macromolecules: Factor H complement control protein modules 10–15 and 19–20 and the DNA-binding core domain of tumour suppressor p53

Peter A. Faull, Hannah V. Florance, Christoph Q. Schmidt, Nick Tomczyk, Paul N. Barlow, Ted R. Hupp, Penka V. Nikolova, Perdita E. Barran

The effect of zinc on the conformations of p53 is explored by IM-MS.

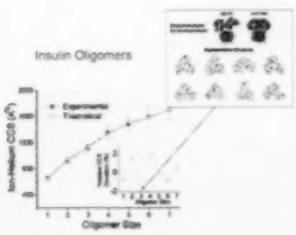


111–118

A study of ion-neutral collision cross-section values for low charge states of peptides, proteins, and peptide/protein complexes

Francisco A. Fernandez-Lima, Ryan C. Blase, David H. Russell

The basis for a high confidence level peptide, small protein, and peptide/protein ionic complexes analyses based on a database of ion-helium collision cross-sections is provided.

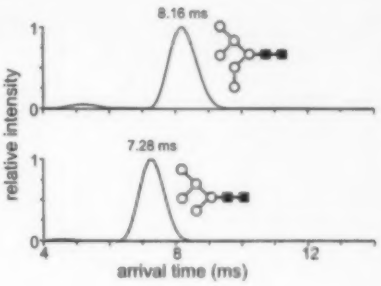


119–127

Characterization of simple isomeric oligosaccharides and the rapid separation of glycan mixtures by ion mobility mass spectrometry

Jonathan P. Williams, Megan Grabenauer, Richard J. Holland, Catherine J. Carpenter, Mark R. Wormald, Kevin Giles, David J. Harvey, Robert H. Bateman, James H. Scrivens, Michael T. Bowers

Traveling wave-based and standard drift tube ion mobility techniques were used to examine gas-phase conformations of a series of isomeric oligosaccharides and *N*-linked glycans from various sources.



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